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ABSTRACT

The purpose of this research review was to demonstrate the relationship between the research and evaluation activities and the operational programs of the American Vocational Association (AVA) as it was presented to the 1970 annual convention. The 18 research reports are reviewed under these categories: (1) Awareness, Maturity, and Performance, (2) Centers and Computers, (3) Agricultural Education, (4) Beyond High School, (5) Vocational Education, Research, and Development, (6) Health Occupations and Home Economics, (7) Distributive Education and Office Education, and (8) Trade and Industrial Achievement Tests. A brief review of the AVA Research and Evaluation Department activities is provided. (SB)

RESEARCH VISIBILITY
SYNTHESIS / APPLICATION / DISSEMINATION

Research and Evaluation

Convention Report by Vernon E. Burgener, Chairman, AVA Research and Evaluation Department

THE 1970 Vocational Convention will be characterized as that point in vocational education history when adoption proceedings were finally consummated for the stepchild *Research*. Emphasis on the supportive function of research recurred in programs of the AVA Research and Evaluation Department and in the concentrated AVERA programs of the New and Related Services Division. Almost without exception, other Divisions felt it imperative to include one or more presentations on *Research, Studies, Evaluation, Impact, Accreditation, Accountability,* or *Experiments.*

In an attempt to review the convention R&E activities, it is important to think of the synergistic effects of research and evaluation. As the alpha and omega of the total vocational education continuum, the former becomes predecessive to proper planning and the latter successive to system operation. The intervening program configuration is dependent on the quality of the research which precedes it, and the accuracy of the evaluation which feeds back modifications into the system.

The unification of components into one effort suggests an answer to Dr. William W. Stevenson's question in *RV* (March, 1970), "Will it [research] make a difference?" The answer is, "It has made a difference because results are already in use, and the difference is just beginning to be seen." Evaluation as perceived and highlighted at the 1970 convention is much more than evaluation for advisory committee and council usage as emphasized in *RV* (February 1970). Much evaluation, both internal and external, becomes an integral part of program operation and results in modification, adjustment and change before reaching the feed-back of terminal recommendations or many later. The fears and doubts might have been greater in 1966, if the influence of AVERA on AVA policy and on national legislation and appropriations could have been foreseen.

It is particularly pleasing to see the gaps closing between component parts of our "family" of vocational educators. There should be little surprise if, through the excellent leadership in AVA, vocational education becomes the first educational discipline to accept a truly Gestaltic continuum. Legislatively, it was the first to accept research as a *proportionate* part of program operation. At last, that proportionate part was funded by the FY 1971 appropriation. This fact, too, contributes to the feeling of *1970—The Year Vocational Education Research Came Of Age.*

Resolution 15, (*see page* 93), which was passed unanimously by the House of Delegates after being recommended almost unanimously by the AVA Board of Directors, is heartening in that it calls for continued support of the legislated 10 percent of basic grants to be used for research; for continuation of practical research activities emanating from the National Centers for Vocational Education and from many existing projects which contribute to the development of new and emerging vocational and technical curricula; for maintenance of the national network of RCUs to integrate research activities of the states with the National Centers and USOE; for consistency of effort to allow programmatic research to continue; and for commendation of past research administrative efforts by the Division of Comprehensive and Vocational Research in USOE.

Few charter members of the American Vocational Education Research Association (AVERA) would have believed after its acceptance by the AVA Board of Directors on Dec. 7, 1966, as an associated organization in AVA (not without doubts and trepidation) that such a strong resolution would be accepted in a convention only four years

In 1970, it was welcomed, and in July 1971 John Coster, who was nominated by the Research Section of the New and Related Services Division, will join the AVA Board of Directors. Built upon this foundation, *RV* portrays in this issue, the distinct linkages of research and evaluation to operational programs as presented at the 1970 AVA Convention.

Materials contained in the ERIC Clearinghouse were related to convention proceedings by a review of citations for program presenters. This review was made by Joel Magisos of The Center for Research and Leadership Development in Vocational and Technical Education.

RESEARCH for its own sake is INIQUITOUS.
RESEARCH to train researchers is TOLERABLE.
RESEARCH for program improvement is PROPITIOUS.
RESEARCH to improve the education of a child is VIRTUOUS.
RESEARCH for vocational education is SACERDOTAL.

iniquitous = grossly unjust, wicked
tolerable = endurable, moderately good
propitious = favorable, benevolent
virtuous = morally excellent, righteous
sacerdotal = priestly, mediation between entities (usually God and man)
(*RV* Editor's translation)

V. E. BURGENER, Guest Editor

Awareness, Maturity and Performance

Evaluation of a "Vocational Awareness" Program in the Elementary School. John M. Wilson, Director of Vocational Education, Yakima, Wash.

Children's attitudes toward the world of work are formed at a very early age. Parents, peer groups and teachers all tend to direct the child toward a baccalaureate degree.

The first summer consisted of vocational appreciation activities with children in grades 4-6. Activities consisted of field trips, resource speakers and interdisciplinarily articulated classroom activities. Success of the initial summer's work demonstrated the need to experiment with K-3 children. It was determined that children of this age level do apprehend the concepts appropriate to their maturity.

It became apparent that the real need was to get the philosophy of vocational awareness to the classroom teacher so that it could be integrated into the classroom subjects.

Twenty-four teachers are now working with 300 children in grades 1-6 to evaluate methods of developing vocational awareness.

A mobile classroom will take "Vocational Awareness" to the schools in the 1970-71 school year. This project includes a "Vocational Awareness Specialist." (Reported as VT 011 230).

The Impact of Vocational Training on Vocational Maturity. David Pucel, Assistant Professor, Industrial Education Department, University of Minnesota, Minneapolis.

The use of the *Vocational Development Inventory* as an instrument to counsel persons in terms of vocational-technical programs is questioned. The instrument appears to have been developed so that aspiring to a typical vocational program would give a person a low score as compared with one aspiring to a professional level occupation independent of how well thought out one's vocational plans are. The basic factors contributing to this bias appear to be an interest continuum favoring persons interested in professional occupations and an intelligence continuum favoring the more intelligent.

This sub-study also revealed that post-high school vocational training has a differential effect upon the vocational maturity of persons enrolled in training programs as measured by the attitude scale of the *Vocational Development Inventory*. Persons enrolled in technical programs significantly increased in vocational maturity while persons enrolled in skilled and sales/clerical programs did not. Also, it appears that persons with relatively low VDI scores who are not accepted for training and who enter employment do increase their VDI scores to a level similar to that of those who have taken part in training.

The Development of Valid Work Performance Evaluation Measures. Curtis R. Finch, Instructor, and Joseph T. Impellitteri, Chairman, Graduate Education and Research Department of Vocational Education, Pennsylvania State University, University Park.

An instrument was developed to measure student attitudes toward individualized and laboratory instruction during a specific period of instruction such as an hour, day, week, or month. Positive and negative statements relating to these attitudes were developed and screened. A "Shop and Laboratory Attitude Inventory" was the result. ED 026 539 (VT 007 836).

Selected Leadership Dimensions of Management Personnel in Vocational Education. John B. Moullette, Associate Professor, Washington State University, Pullman.

This was a report of the behavior and the leadership dimensions of management personnel in four occupations —vocational education, general education, industry, and the military at three management levels: top, middle, and lower—with regards to communications, human relations, and style and technique as perceived by inservice management personnel.

The three levels of management personnel in the four occupations were in agreement in their perceptions that the dimensions of communications, human relations, and style and technique are behavioral characteristics of leaders sampled; however, management personnel in the military perceived the behavioral characteristics as centering more on the dimension of communications than on the other two dimensions. Management personnel in industry perceived the behavioral characteristics as centering less on the dimension of human relations.

Centers and Computers

Massachusetts and New York Evaluation Service Center for Occupational Education. William G. Conroy, Jr., Director, Research Coordinating Unit, Department of Education, Boston, Mass., and Louis A. Cohen, Director, Bureau of Occupational Education Research, State Department of Education, Albany, N.Y.

Massachusetts and New York are jointly developing an evaluation process to meet the program evaluation needs of occupational education in each state. The Evaluation Service Center is designed to test the feasibility of establishing and maintaining a process of program evaluation consistent with the philosophical principle that program objectives in occupational education should be determined by local educational agencies (LEA's), not prescribed by central authorities.

The Evaluation Service Center attempts to bring increased accountability to occupational education focused on student achievement, but not at the cost of program rigidification within a state.

Ten schools in the two states are working with the Evaluation Service Center in developing an evaluation system. Schools are assisted in describing occupational programs by behavioral objectives, tests to measure student performance on locally determined objectives, data analysis and feedback services for LEA's and state departments, and in instructing personnel in the use of program evaluation data for program modification.

Utilization of a Centralized Computer Data System. William A. McIntosh, Vice President, Educational Planning and Evaluation, Central Piedmont College, Charlotte, N.C.

The presentation, with slide illustrations, describes the hardware and linkages used in establishing a workable centralized system in North Carolina. Terminals at several high schools provide the instructional contact with computer centers located on college campuses. A guide for planning facilities is described in RIE as ED 023 927. (VT 007 371).

Agricultural Education

The Effectiveness of Structured Occupational Experience for Instructors of Agricultural Occupations. Alfred J. Mannebach, Assistant Professor, University of Kentucky, Lexington.

This study reports the effect of an intensive four-week experimental educational program involving structured, on-the-job, occupational experiences in agricultural firms, plus related classroom instruction, on the behavior of instructors of agricultural occupations.

Illinois high school and junior college instructors of agricultural occupations conducting concurrent work-education programs in agricultural firms were the population. Two independent random samples (experimental and control groups) of 11 high school instructors were selected from 22 high school instructors who applied.

Both groups of instructors completed three instruments designed to evaluate

partially the experimental educational program. The instruments completed were: (1) a test of knowledge, (2) an attitude scale, and (3) a card-sort inventory.

In addition evidence consisting of objective ratings and descriptive statements concerning the effectiveness of certain aspects of the program was collected from the participating agricultural businessmen and the high school and junior college instructors who completed the program.

Businessman and instructor reaction to the program was excellent to good. There was general agreement that the experimental educational program was meeting a critical inservice need of instructors.

Research To Identify Nonfarm Agricultural Occupations. Charles M. Curtis, Professor of Agricultural Education, Louisiana State University, Baton Rouge.

Seven area surveys were conducted in various Louisiana locations to identify off-farm agricultural business, to secure qualifications for the jobs, and to determine agricultural training requirements. (VT 000 538, VT 000 539, VT 000 540, VT 000 541, VT 000 545, VT 000 581, VT 000 583; VT 000 536 reports a similar study in West Virginia.)

Issues Involved in Evaluating Vocational Agricultural Programs. Harold Starr, Center for Research and Leadership Development in Vocational and Technical Education, Columbus, Ohio.

The development of a system for state evaluation of vocational education is related to evaluation of vocational agriculture programs. The system facilitates programed decision-making through the incorporation of information about national and state interests, student benefits and manpower requirements. ED 032 436 (VT 009 511), (VT 008 213).

Beyond High School

The Mobility of Pennsylvania State Two-Year Technician Graduates. Angelo C. Gillie, Associate Professor, Graduate Studies and Research, Department of Vocational Education, Pennsylvania State University, University Park.

Data for this study were obtained from an analysis of the records of technicians who have graduated from Pennsylvania State University since 1955. The total population consisted of approximately 6,200 graduates of electronics and drafting design curriculums, 9.

Vocational Education Research & Development

Vocational Education Research and Development. Robert E. Pruitt, Director, OCVER, National Center for Educational Research and Development, USOE, Washington, D.C.

Research and development is needed which will result in vocational education programs that will attract students and permit them to maximize their career and personal development.

In planning vocational R&D activities, relationship should be intimate among the input, process, output, and feedback components of the system (the term "vocational education" encompasses vocational, technical and paraprofessional education).

1. Input (Vocational Student and Vocational Opportunity).

Vocational student is the raw material for the vocational education program. Certain kinds of activity must be generated to get him or her into the program, to monitor progress through it, and afterward to pursue a career and live a satisfying life.

Vocational opportunity is defined as the employment available to, and responsible adult behavior expected of, the student terminating a vocational education program.

2. Process (Vocational Program).

Vocational program embraces a series of components such as program planning, management, and evaluation; career selection and planning; curricula and instructional systems, and educational administration.

3. Output (Vocational Product).

Vocational product is the output of the vocational education program. The desired output of the program is a graduate who has developed sufficient abilities and attitudes to enter the labor market or continue his vocational or academic education. Upon entering the world of work he is capable of advancing in his chosen career, adjusting to changing business practices or production processes, and assuming adult responsibilities.

Eight broad categories for vocational education research and development activities emerge from the above structural outline: (1) The student and his environment; (2) application of manpower data to occupational education; (3) state and local program planning techniques; (4) instructional systems development; (5) career development, guidance, placement, and follow-up; (6) instructional facilities; (7) organization and administraton, and (8) evaluation.

Some of the results are: (1) two-thirds of all graduates are living in Pennsylvania at this time; (2) the drafting design groups experienced a greater number of simultaneous job and resident changes, while the electronics technology graduates averaged a greater number of job changes with different companies; (3) a greater number of the drafting design groups than the electronics groups moved to distances beyond 200 miles for their first job, but a larger number of electronics groups beyond that distance for their present job.

An Analysis of Student Teaching Problems as Perceived by Student Teachers and Cooperating Teachers in Vocational Home Economics Programs. Camille G. Bell, Professor and Chairman, Home Economics Education, Texas Tech University, Lubbock.

This study attempted to determine problems of student teachers as experienced by students during their student teaching, the problems as perceived by cooperating teachers, institution oriented problems, student-oriented problems, correlation of perceived problems to certain demographic variables, and correlation of perceived problems and the size of the student teaching center.

A wide difference in perception of student teachers and cooperating teachers indicated that more emphasis should be placed on inservice meetings to share ideas of theory and practice.

A lack of significant relationship between the types of teaching problems perceived by student teachers and cooperating teachers and their socioeconomic status as indicated by Warner, *et al.*, suggests the possibility that teacher education programs have a greater influence on student teachers' perception of their effectiveness than their backgrounds.

Teacher education programs must develop more effective methods of extending communications.

Evaluation and Accreditation of Community Colleges Offering Occupational Education Programs. Elizabeth E. Kerr, Director, Program in Health Occupations Education, University of Iowa, Iowa City.

The problems of effectively concentrating courses, efficiently using time and money, providing adequate training, and helping alleviate the nurse shortage could be solved by establishing definitive associate degree programs in nursing. A suggested curriculum and course descriptions are available and reported in: ED 016 864 (VT 004 494), ED 040 300 (VT 011 351).

Health Occupations and Home Economics

Program Development for Training Homemaker Home-Health Aides. Marie P. Meyer, Associate Professor, Department of Vocational-Technical Education, Rutgers University, New Brunswick, N.J.

A two-week non-credit workshop in 1968 included as participants: directors and consultants, Homemaker-Home Health Aide Agencies; vocational-technical home economics education consultants, coordinators and supervisors, and home economics classroom teachers and coordinators of home economics related occupational programs at secondary and adult levels.

The content and procedures of the two-week workshop were planned to: (1) develop plans to improve and expand programs to train homemaker-home health aides, and (2) demonstrate ability in using the resource guide, *Homemaker-Home Health Aides—Training Manual.*

Follow-up in January 1969 consisted of progress reports on projected plans in terms of agency contacts, training programs initiated and/or expanded, and adaptation and use made of the training guide.

Participants' attitudes changed significantly during a concentrated two-week workshop as indicated in comparing their responses to those of nonparticipating control group members. Thirty-five participants (90 percent) indicated that their personal and professional objectives had been achieved; follow-up reports indicated that those reporting (92 percent) had been motivated to make many agency contacts and to initiate and expand programs using the training manual.

UCLA Projects—Health Occupations Task Analysis and Evaluation. Robert R. Henrich, Senior Associate Director, Allied Health Professions Project, University of California, Los Angeles, and Eleanor Gilpatrick, Director, Health Services Mobility Study, New York, N.Y.

Tasks are analyzed in terms of frequency, relative frequency, importance, kind of skill, and knowledge required. The UCLA project grew out of previous project work done by these researchers and reported in: ED 028 251 (VT 006 864), ED 030 754 (VT 008 834), ED 033 235 (VT 009 546).

Evaluation of Vocational Home Economics Programs in Terms of Effectiveness of Full-Time Homemakers and Homemakers Who Are Also Full-Time Employees. Aleene Cross, Head, Home Economics Education, University of Georgia, Athens; Anna Gorman, The Center for Research and Leadership Development in Vocational and Technical Education, Columbus, Ohio; Helen A. Loftis, Winthrop College, Rock Hill, S.C., and Agnes F. Ridley, Florida State University, Tallahassee.

A determination of the effectiveness of full-time homemakers and homemakers who combine careers in employment is backed up by a plethora of reported results by these four distinguished researchers. Much of their pertinent research is reported in RIE: ED 013 868 (VT 000 154), ED 016 071 (VT 003 214), ED 024 807 (VT 007 138), ED 030 736 (VT 008 735), ED 035 715 (VT 002 431), and ED 035 736 (VT 010 023).

DE, Office Education

Senior Intensified Program in Detroit. Jeanne Reed, Supervisor of Business Education, Detroit Public Schools, Detroit.

The Senior Intensified Program (SIP) is a curriculum pattern aimed at providing an entry occupation skill in one year at the senior high school grade level. SIP was developed for: (1) Data Processing (assistant computer console operator); (2) Distributive Education (assistant computer console operator), and (3) Office Education (clerk-stenographer or clerk-typist).

Findings from the research study, "Opportunities and Requirements for Initial Employment of School Leavers with Emphasis on Office and Retail Jobs," provided the basis for the tasks and units included in the instructional materials.

For a two-year period, students from 12 Detroit high schools were enrolled in 26 sections of SIP to test the effectiveness of the program.

Follow-up research has been conducted with a twofold purpose: (1) to determine whether or not sufficient skill can be taught to senior students who have not had previous business courses to prepare them for entry-level employment; (2) to compare the effectiveness of the SIP with the traditional high school business curriculum.

Statistically, there were no significant differences between ratings for outputs from SIP and the traditional program. Yet, SIP was successful in preparing students in less than half the class time required by the traditional.

T & I Achievement Tests

Exploring the Use of the Ohio Trade and Industrial Education Achievement Tests. Thomas E. Long, Assistant Professor, Graduate Studies and Research, and Jerome T. Kapes, Graduate Assistant, Pennsylvania State University, University Park.

This investigation attempted to uncover evidence pertaining to the criterion related validity of the Ohio Trade and Industrial Education Achievement Test (OTAT).

The 1969 sample included 195 students enrolled in seven trade areas. The 1970 sample included 197 students from nine trade areas. Three independent variables included in the OTAT battery were the *California Survey of Mental Maturity* (CSMM) total raw score, *Stanford Arithmetic* computational section raw score, and the *Trade and Industrial Achievement Test* (T&I Achievement) total raw score. The criterion for the study was the grade assigned by the shop instructor at the end of each year.

The T&I Achievement Test yielded moderate correlations with shop grades ranging from .31 to .45. The longitudinal data indicated that while the *T&I Achievement Test* scores were fairly unstable over a one-year period (r=.69), shop grades were fairly unstable (r=.49). The following conclusions were drawn from the study:

1. That shop grades contain a large component which is not related to ability or knowledge of the subject matter.
2. That *T&I Achievement Test* may validly measure those aspects of achievement which can be easily reflected in a paper and pencil knowledge test, but measures only a small portion of whatever it is that shop instructors base grades on.
3. The *T&I Achievement Test* may be useful as an evaluation tool when that evaluation is concerned with the course content. Course grades may be a better measure when a more global concept of school success is desired.

Research Visibility is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The *Research Visibility* report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields.

George L. Brandon, professor in residence (Pennsylvania State University) is editor of *Research Visibility*.